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Patent Number: EP0429270

Publication
date: 1991-05-29

Inventor(s): OKUDAIRA SADAYUKI (JP); KOMATSU HIDEO (JP); MATSUMOTO
OSAMU (JP); KANAZAWA MOTOICHI (JP); SASADA KAZUO (JP); NAITO
TSUYOSHI (JP)

Applicant(s): KOKUSAI ELECTRIC CO LTD (JP)

Requested
Patent: ☐ EP0429270, B1

Application
Number: EP19900312550 19901119

Priority
Number(s): JP19890301618 19891120

IPC
Classification: G03F7/36

EC
Classification: G03F7/36

EC
Classification: G03F7/36

Equivalents: DE69028180D, DE69028180T, JP2926798B2, ☐ JP3161929,
KR9311905, ☐ US5127987

Abstract

A plurality of resist membranes are formed on a semiconductor wafer to be etched. The top resist is patterned by light beam, laser beam, X-rays, or electron beams to form a mask. The wafer is transferred to a first unit (2) into which discharging gas is introduced and plasma is generated in order to dry-etch the multilayer resists. The multilayer is transferred to a second unit (3) in a vacuum. In the second unit, the membrane of the wafer is dry-etched to a predetermined depth. The wafer then is transferred to a third unit (4) in a vacuum where part of the resist is removed according to the mask pattern and treatment of the resist by the plasma.